

1)

35° shot

$$y = ax^2 + bx + c$$

$$c = 7$$

$$10 = 9a + 3b + 7$$

$$\rightarrow 3 = 9a + 3b$$

$$1 = 3a + b$$

$$1 - 3a = b$$

$$10 = 182.25a + 13.5b + 7$$

$$\rightarrow 3 = 182.25a + 13.5b$$

$$1 = 60.75a + 4.5b$$

↓

$$b = 1 - 3a$$

$$1 = 60.75a + 4.5b$$

$$1 = 60.75a + 4.5(1 - 3a)$$

$$1 = 60.75a + 4.5 - 13.5a$$

$$-3.5 = 47.25a$$

$$-0.074 = a \quad \text{or} \quad -\frac{2}{27} = a$$

$$1.2 = b \quad \frac{11}{9} = b$$

$$35^\circ \text{ shot: } y = -\frac{2}{27}x^2 + \frac{11}{9}x + 7$$

or

$$y = -0.074x^2 + 1.2x + 7$$

45° shot

$$y = ax^2 + bx + c$$

$$c = 7$$

$$10 = 182.25a + 13.5b + 7$$

$$3 = 182.25a + 13.5b$$

$$1 = 60.75a + 4.5b$$

$$12 = 121a + 11b + 7$$

$$5 = 121a + 11b$$

$$11(1 = 60.75a + 4.5b) \rightarrow 11 = 668.25a + 49.5b$$

$$-45(5 = 121a + 11b)$$

$$\rightarrow -22.5 = -544.5a - 49.5b$$

$$-11.5 = 123.75a$$

$$-0.092 = a \text{ or } \frac{-46}{495} = a$$

$$1.476 = b \text{ or } \frac{731}{495} = b$$

$$45^\circ \text{ shot: } y = -0.092x^2 + 1.476x + 7$$

or

$$y = -\frac{46}{495}x^2 + \frac{731}{495}x + 7$$

53° shot

$$y = ax^2 + bx + c$$

$$c = 7$$

$$10 = 182.25a + 13.5b + 7$$

$$\rightarrow 1 = 60.75a + 4.5b$$

$$12.5 = 16a + 4b + 7$$

$$\rightarrow 5.5 = 16a + 4b$$

$$1.375 = 4a + b$$

$$1.375 - 4a = b$$

$$1 = 60.75a + 4.5(1.375 - 4a)$$

$$1 = 60.75a + 6.1875 - 18a$$

$$1 = 42.75a + 6.1875$$

$$-0.0121345 = a \quad \text{or} \quad \frac{-83}{684} = a$$

$$1.86$$

$$\text{or} \quad \frac{2545}{1368} = b$$

$$53^\circ \text{ shot: } y = -0.0121345x^2 + 1.86x + 7$$

$$y = \frac{-83}{684}x^2 + \frac{2545}{1368}x + 7$$